IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

1-11. (Canceled).

12. (New) A radio apparatus that communicates with another radio apparatus using a fixed-length packet and a fixed-length short packet, which is shorter than the fixed-length packet, the radio apparatus comprising:

an interface section that identifies a first Internet Group Multicast Protocol (IGMP) message contained in a first Internet Protocol (IP) packet; and

an IGMP processing section that maps a subset of the identified first IGMP message into a first fixed-length short packet.

13. (New) The radio apparatus of claim 12, wherein the IGMP processing section removes a check sum field from the identified first IGMP message and maps the rest of the identified first IGMP message into the first fixed-length short packet.

14. (New) The radio apparatus of claim 12, further comprising a frame composition section that maps a second IP packet into a first fixed-length packet and composes a first frame signal from the first fixed-length packet and the first fixed-length short packet.

15. (New) The radio apparatus of claim 14, wherein:

the frame composition section decomposes a second frame signal received from another radio apparatus to extract a third IP packet and a second fixed-length short packet from the received second frame signal; and

the IGMP processing section extracts a second IGMP message from the extracted second fixed-length short packet and maps the extracted second IGMP message into a fourth IP packet.

16. (New) The radio apparatus of claim 15, wherein the interface section multiplexes the third and fourth IP packets.

17. (New) A base station apparatus comprising the radio apparatus of claim 12.

18. (New) A mobile station apparatus comprising the radio apparatus of claim 12.

19. (New) A radio communication system having a mobile or base station that controls radio resource allocation, the mobile or base station having a radio apparatus that communicates with another radio apparatus using a fixed-length packet and a fixed-length short packet, which is shorter than the fixed-length packet, the radio apparatus comprising:

an interface section that identifies an Internet Group Multicast Protocol (IGMP) message contained in an Internet Protocol (IP) packet; and

an IGMP processing section that maps a subset of the identified IGMP message into a fixed-length short packet.

20. (New) The radio communication system of claim 19, wherein the IGMP processing section removes a check sum field from the identified IGMP message and maps the rest of the identified IGMP message into the fixed-length short packet.

21. (New) A radio communication system comprising:

a communication network apparatus; and

a radio apparatus that:

a) communicates with another radio apparatus using a fixed-length packet and a fixed-length short packet, which is shorter than the fixed-length packet, and

b) communicates Internet Protocol (IP) packets with the communication network apparatus via a router, the radio apparatus comprising:

an interface section that identifies an Internet Group Multicast Protocol (IGMP) message contained in an Internet Protocol (IP) packet received from the communication network apparatus; and

an IGMP processing section that maps a subset of the identified IGMP message into a fixed-length short packet.

22. (New) The radio communication system of claim 21, wherein the IGMP processing section removes a check sum field from the identified IGMP message and maps the rest of the identified IGMP message into the fixed-length short packet.

23. (New) A multicast communication method for communicating between radio apparatuses a fixed-length packet and a fixed-length short packet, which is shorter than the fixed-length packet, the method comprising:

identifying a first Internet Group Multicast Protocol (IGMP) message contained in a first Internet Protocol (IP) packet; and

mapping a subset of the identified first IGMP message into a first fixed-length short packet.

24. (New) The method of claim 23, further comprising removing a check sum field from the identified first IGMP message before mapping the subset of the identified first IGMP message into the first fixed-length short packet.

25. (New) The method of claim 23, further comprising:

mapping a second IP packet into a first fixed-length packet, and

composing a first frame signal from the first fixed-length packet and the first fixed-length short packet.

26. (New) The method of claim 25, further comprising:

decomposing a second frame signal received from another radio apparatus to extract a third IP packet and a second fixed-length short packet from the received second frame signal,

extracting a second IGMP message from the extracted second fixed-length short packet, and

mapping the extracted second IGMP message into a fourth IP packet.